



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/808,374

03/25/2004

Yi Yeol Lyu

6661-000041/US

4754

30593

7590

06/13/2008

HARNESS, DICKEY & PIERCE, P.L.C.

P.O. BOX 8910

RESTON, VA 20195

EXAMINER

ZEMEL, IRINA SOPHIA

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

06/13/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

10/808,374

Applicant(s)

LYU ET AL.

Examiner

Irina S. Zemel

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 May 2008.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
4a) Of the above claim(s) 14-21 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-13 and 22 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/CDC)
Paper No(s)/Mail Date 5/28/08, 6/30/04
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Invention Group I, claims 1-13 and 22 in the reply filed on February 5, 2008 is acknowledged. The traversal is on the ground(s) that no serious burden on the examiner exists by searching and examining all three groups together. This is not found persuasive because the examiner expressly discussed in the previous office action that the different groups of inventions are classified not only is different subclasses of one class, but in different classes. A serious burden exists in searching different invention in different classes/subclasses as such search is not coextensive .

The applicants further argue that claims 20 and 21 are linking claims linking claims 1 and 14, and 1 and 17, respectively, and, as such, should be examined together with invention group I. First of all, it is noted that the applicants, in their arguments, refer to the section of MPEP, i.e., MPEP 803, which section does not discuss linking claims (other than Marjush type or in Transitional applications). The section which discusses linking claims is MPEP 809. This section discussed such claims and defines them as claims which "if allowable, would require rejoinder of the otherwise divisible inventions." In the instant case it is not seen how claims directed to a film, even if allowable, would require rejoinder of a composition claims and a process claims, when patentability of the film claims clearly does not impart patentability of the other two groups. Thus, claims 20 and 21 are not seen as linking and are withdrawn

Art Unit: 1796

from consideration at this time as per restriction requirement set forth in the previous office action.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-13 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,623,711 to Lyu et al., (hereinafter "Lyu") in combination with US Patent 5,700,899 to koi et al., (hereinafter "Akoi").

Lyu discloses composition for forming a porous dielectric film, comprising: a siloxane-based resin precursor; a pore-generating material; and a solvent for dissolving the precursor and the porogen. See, for example, illustrative examples. The siloxane-based resin disclosed by Lyu fully correspond to the claimed resin, including resins obtained prepared by hydrolysis and polycondensation one cyclic siloxane based monomer of formula 1, column 2, lines 30-35, , and at least one silane-based monomer selected from the group consisting of compounds represented by Formulae 3 and 4 (column 5, line 6—column 6, line 23) of Lyu, using an acid such as hydrochloric acid, and water in an organic solvent. See also illustrative example 2, for general procedure, and specifically examples 1-4 and 1-5. The process conditions of claim 7 are met

Art Unit: 1796

by illustrative examples of Lyu as well as the types and the amounts of solvents as per claims 12 and 14. See also disclosure in

As the porogen compound the reference expressly discloses heptakis(2,3,6-tri-O-methyl)-.beta.-cyclodextrin, which correspond to the formula of the claimed invention.

A porous dielectric film prepared the disclosed compositions is further disclosed in illustrative examples.

Lyu does not disclose a condensation catalyst generator in the compositions of his invention. However, addition of photoacid or photobase catalyst generator to the compositions of Lyu would have been obvious from the disclosure of Akoi. Akoi discloses that addition of catalyst generators (corresponding to the catalyst generators s generically claimed in the instant invention, and specifically claimed in claims 8-10 (see, specifically column 5, lines 37-63 of Akoi)) to siloxane based resin precursors substantially identical to the siloxane precursors as disclosed and claimed in the instant specification results in compositions that can be quickly and efficiently cured by brief exposure to UV light. Therefore, addition of a catalyst generator (which is as photobase or photoacid generator disclosed by Akoi to compositions of Lyu containing curable siloxane resin precursor substantially similar to the curable precursors disclosed in Akoi) in the amounts corresponding to the claimed amounts (based on the precursor, see column 5, line 64 to column 6, line 5 of Akoi) would have been obvious to achieve compositions that can be quickly and efficiently cured by exposure to UV light.

Comparative examples in the instant application are noted, however the results are considered to be unexpected as the compositions lacking photo catalyst generator are expected to be incompletely cured at the conditions of the experiment, thus exhibiting inferior elasticity properties.

The invention as claimed, therefor, would have been obvious from the combined disclosure of the cited references as discussed above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irina S. Zemel whose telephone number is (571)272-0577. The examiner can normally be reached on Monday-Friday 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571)272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 1796

/ Irina S. Zemel/
Primary Examiner, Art Unit 1796

Irina S. Zemel
Primary Examiner
Art Unit 1796

ISZ